REMARKS/ARGUMENTS

This response has been filed with a Petition to Revive and with a Power of Attorney so that future PTO correspondence is directed to the firm which dockets the office actions. The Office Action dated August 12, 2003 rejected claims 1-21 under 35 U.S.C. 102(e) as being anticipated by Chishti et al. (U.S. Patent 6,210,162). The Office Action noted as follows:

> *"Regarding claims 1-21, Chishti discloses that generating a template representing data common to the object (Fig. 4, element 200); generating specific data to customize the object in conjunction with the template (Fig. 5, element 220); and fabricating a customized version of the object (Fig. 1- Fig. 3); generating a tool-path to customize the object(); the target path is represented as a spline (Fig. 5, element 235); the object has an ideal model surface, further comprising creating an idealized tool-path from the ideal model surface (column 4, line 51- column 5, line 5); generating a mathematically smooth 3D spline using the idealized toolpath (Fig. 12, element 280); generating surface normal from the ideal model surface at points distributed around the idealized toolpath (column 4, lines 36-51); displacing each surface normal from its end to the nearest point on the smooth 3D spline (column 6, lines 6-15); creating a spline connecting each unattached end of each surface normal (Fig. 12, element 285), the ends are attached sequentially in a loop (column 3, lines 26-39); a source spline to define motion of the tool head by defining tool orientation vectors (column 2, lines 1531), and subsequent motion of a tool head adjusting the source spline (Fig. 5); source spline is adjusted by moderate elevation-or-lowering-of the-angle- of the surface normal (column 2, lines 41-54). Pages 1-2 of the Office Action."*

Applicants respectfully traverse the Section 102 rejection based on Chishti. Chishti relates to a positive mold for use in creating an orthodontic appliance is produced by obtaining a digital dentition model, such as a 3D geometric surface model or a 3D volumetric image model, that defines the shape of an orthodontic appliance and then altering the digital dentition model to remove a portion that does not affect the shape of the orthodontic appliance. The altered digital dentition model then is used to construct a positive mold for the orthodontic appliance. Chishti shows the use of a rapid prototyping device, such as a stereolithography machine, to construct the positive mold.

Chishti thus produces the appliances that benefits from subsequent operations taught in the instant invention. As noted on page 8 of the instant application:

> *"During manufacturing, the appliances need to be cut or trimmed. The processes described below generate toolpaths from geometric input to define automated motion of a computer-controlled device to trim objects such as appliances. The application of this technique is more appropriate for complex, three-dimensional solid or surface geometry, both in reference to the toolpath and to the basic shape used to create the toolpath (i.e., the workpiece). However, the techniques can be applied to two-dimensional geometry as well."*

Here, with respect to claim 1, Chishti does not show the claimed template. One embodiment of a template is described on page 9 as follows:

The template takes common information required for the CAM process as a standard for all cases in mass customization. By applying a relatively simple set of data that represents the differences between all of the different parts, the template 404 can be adapted for each object 402 to customize the output. The information embodied in the template may be streamlined. One optimization removes CAM calculations that are based on specific solid geometry from the toolpath generation process. In such an optimization, surface undulations are ignored. The optimization of tool head velocity can be achieved by minimizing the number, magnitudes and durations of accelerations because these parameters have deleterious effect on average velocity. The template minimizes these degradations of toolpath motions by ignoring their source.

The Office Action compared the template to Chishti's Fig. 5, element 220, which is described in Chishti as follows:

> *"FIGS. 5 through 11 illustrate a specific implementation of this technique. The computer first receives the solid 3D digital model of the mold, which in this example is a 3D geometric surface model 135 (step 220). FIG. 6 shows a cross sectional slice 130 of the data set that includes a cross-section of the 3D geometric surface model 135. The computer then converts the 3D geometric surface model 135 into a 3D volumetric model ("voxel model") 140 of the solid mold (step 225). In alternative implementations, the computer receives a voxel model of the mold and therefore does need to create a voxel model from a geometric surface model. FIG. 7 shows a cross-sectional slice of the voxel model 140, in which light-colored voxels 145 represent the mold and dark-colored*

voxels 150 represent the background image. The light-colored voxels 145 are created to fit within the geometric surface model 135."

As can be seen, Chishti does not mention the word "template" and does not have the claimed template. Since at least this element is missing, Chishti cannot anticipate claim 1. Additionally, Chishti does not show the specifics of generating a template representing data common to the object.

Moreover, Chishti does not show generating specific data to customize the object in conjunction with the template. There is no customizing of the object in conjunction with the template, and the Office Action fails to show this element. Hence, Chishti cannot anticipate claim 1 for this independent reason.

Since a number of elements are missing from independent claim 1, Chishti cannot anticipate claim 1 and those dependent therefrom.

With respect to claim 13, Chishti does not show receiving a digital representation of a target path; generating a mathematically smoothed version of the target path; applying the smoothed target path to generate a secondary target path; and generating a streamlined tool-path to fabricate the object. The Office Action is completely silent on these elements. Hence, Chishti cannot anticipate claim 13 and those dependent therefrom. Withdrawal of the Section 102 rejection is respectfully requested.

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

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Attachments: *1) Petition to Revive*
2) Power of Attorney

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